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EXAMINER	
CHAWLA, JYOTI	
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1794	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/691,480	KEELER, JOHN	
	Examiner	Art Unit	
	JYOTI CHAWLA	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-5,7,10,12,13,15 and 18-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-5,7,10,12,13,15 and 18-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's claims filed November 17, 2006 has been entered. Claims 19 and 20 have been added. Claims 3-5, 7, 10, 12-13, 15, 18-20 remain pending in and are examined in the application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Rejection (A)

Claims 3-5, 7, 10, 12-13, 15, 18 -20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doerter (US 5268189) in view of the combination of Peterson et al [J of Food Protection 8/1997, 60 (8), 928-934 (Abstract)], Byrd (US 2546428), Air Liquide Canada (RD 235012 Abstract only) and Sugisawa et al (US 4840805).

Regarding claims 10, 18 and newly added claim 19, Doerter teaches a process of treating and packaging fresh or cooked shellfish meat, such as crab, shrimp or lobster (Column 1, line 11 and lines 52-65) and the packaged product made, by providing a packaging container like a pouch (Column 2, lines 38-39); placing a volume of crabmeat into said packaging vessel (Column 2, lines 35-36). Since the surrounding air (ambient air) will enter the package when the package is open, Doerter teaches of placing a volume of air (ambient air) in the packaging container before sealing of the container after packing (Column 3, lines 11-16) and subsequently pasteurizing the sealed container (Column 3, lines 17-25) as instantly claimed. Doerter also teaches of effectively heating the packaged product to kill microorganisms including Listeria monocytogenes (Column 3, lines 17-20). Killing the microorganisms, such as Listeria (anaerobic bacteria), by heat treatment methods taught by Doerter will prevent the growth of such anaerobic bacteria in the package, as instantly claimed. Thus packaging of shellfish meat including crab in flexible pouches was known at the time of the invention as taught by Doerter. Also heat treatment of the packaged meat by pasteurization or sterilization in order to kill the naturally occurring bacteria (including anaerobic bacteria) was also known in the art of packaging shellfish meat at the time of the invention, as instantly recited in claims 10, 18 and 19.

Regarding the effectiveness of pasteurization as a method of preservation, Peterson et al., hereinafter Peterson, teaches pasteurization of crabmeat that is packed in oxygen-impermeable flexible pouches (Abstract). Peterson also teaches that pasteurization

process extends the shelf life of packaged crabmeat by inactivating spores of clostridium botulinum and listeria monocytogenes which are anaerobic bacteria. Peterson further teaches that sealed crabmeat in a pouch should be kept refrigerated in order to maintain the safety of the packaged crab product (Abstract). Thus, Peterson also provides evidence that packaging of crabmeat in flexible pouches and pasteurizing the packaged crabmeat was known at the time of the invention. Peterson further teaches it was known in the art at the time of the invention that pasteurization is an effective method to inactivate the spores of anaerobic bacteria, such as, botulinum.

Byrd teaches method of keeping shellfish and crustacean meat, such as crabmeat in a fresh condition, without any marked changes in flavor, appearance odor or texture (Column 1, lines 10-19) as is also the intent of the applicant. The reference teaches of packing the crabmeat in containers, which are hermetically sealed and vacuumized (Column 2, lines 39-43). The reference also teaches of reducing the amount of undesirable air space in the package either by vacuuming or by packing tightly (Column 2, lines 44-49). Byrd also teaches of heat-treating the packaged sealed containers in order to raise the internal temperature of mass in the cans reaches between 171 ^{0}F to 210 ^{0}F (Pasteurization temperature range) (Column 3, lines 5-11). The containers of crabmeat as taught by Byrd are cooled and kept refrigerated. Thus, the desirability of reduced volume of air (ambient air) in packaged crabmeat was known at the time of the invention as taught by Byrd.

Doerter teaches of effectively heating the packaged product to kill microorganisms including Listeria monocytogenes (Column 3, lines 17-20). Air Liquide Canada, hereinafter Canada, teaches of packaging fish and sea products (i.e., crabs, lobster etc.) under gaseous atmospheres rich in carbon dioxide (60-80% by volume) but containing an amount of oxygen such that the development of strict anaerobic flora is avoided. Since anaerobic bacteria grow in the absence of oxygen, therefore, it is the proportion of oxygen in the package that affects the growth of anaerobic bacteria. Thus Canada teaches that it was known at the time of the invention that anaerobic bacteria,

such as, clostridium botulinum (i.e., the bacteria that grow in the absence of free oxygen), do not grow in an atmosphere with 20-40% oxygen by volume because the oxygen level prevents their growth. The composition of atmospheric air as being about 21% oxygen was also known at the time of the invention. The oxygen level of atmospheric air or ambient air falls in 20-40% range, thus it would have been obvious to one of ordinary skill at the time of the invention that packaging in an atmosphere of ambient air will similarly have enough oxygen to be effective in preventing the growth of anaerobic bacteria, as recited in the rejected claims 10, 18 and 19.

Specifically regarding controlling the volume of ambient air in the package as recited in claims 5, 7, 10, 15, 18 and 19 Doerter and Byrd references teach reducing (i.e., controlling) the air volume from the package of crabmeat. Doerter teaches of reducing (i.e., controlling) air volume by adding a mixture of carrageenan and water before sealing the package, which would create a partial vacuum in the package of crabmeat as recited in claim 5. Byrd teaches of reducing (i.e., controlling) the air volume in the package of crabmeat either by vacuum processing or by tightly packing the crabmeat in the package (Column 2, lines 44-49). Air liquide Canada teaches that pasteurized crabmeat in the presence of about 20-40% oxygen in the atmosphere of the package, i.e., controlling the volume of air, as instantly claimed. Thus Doerter, Byrd and Canada, all teach controlling the volume of air in the package, as recited in the rejected claims. Doerter, Byrd and Canada references are silent as to the specific volume of ambient air in the package to obtain the ambient air to crabmeat ratio within the package to about 13-20% (as recited in claims 10, 18) or about 20% (as recited in claims7, 15 and 19). Sugisawa et al, hereinafter Sugisawa, teaches packaging the cooked fish product (seafood) under vacuum (Column 3, lines 7-8), where the volume of air in the package is preferably kept less than 15% of the volume of the entire package, to improve the effect of sterilization and to prevent fish meat from breaking (Column 3, lines 3-34 and Example 1). Since there is 15% air volume in the package, therefore, the vacuum as taught by Sugisawa is a partial vacuum as recited in claim 5. Thus, Sugisawa teaches of use of partial vacuum in packaging as instantly claimed. Sugisawa teaches that if the

total volume of the package is 100, the air volume would be 15, i.e., the seafood (fish) volume taught by Sugisawa would be 85 and the resulting ratio of air to fish is 18% (about 20%) by volume, which would fall in the range recited by the applicant in claims 7, 10, 15, 18 and 19.

In summary, the prior art of record, recognized the problem of packaging seafood and crabmeat while preventing anaerobic bacterial growth in packaged fish, shellfish and crabmeat. Prior art also disclosed that in the art of packaging meat or fish or shellfish and especially crabmeat products the following facts/steps were known at the time of the invention:

- Packaging of fish, crabmeat or other seafood in flexible packages was known in the art at the time of the invention (Peterson and Canada).
- Reducing the amount of air from the package before sealing and heat treating (i.e., sterilizing or pasteurizing) the packaged food for longer and safe shelf life of the food (Doerter, Byrd, Canada and Sugisawa).
- Placing a volume of crabmeat or sea product or fish in the vessel was also known in the art (Doerter and Canada).
- Sealing the package after adjusting the volume of air was also known in the art (Doerter and Canada).
- Pasteurizing meat as a method of preservation of seafood was known at the time of the invention (Doerter, Peterson and Byrd).
- Controlling and adjusting the relative proportion of oxygen to 20-40% by volume of the total gas volume can successfully avoid anaerobic bacterial growth in the packaged seafood (Canada). If 20-40% oxygen by volume can avoid anaerobic bacterial growth then presence of atmospheric air or ambient air (which is about 21% oxygen by volume) in the package will similarly be adequate or able to prevent or obstruct anaerobic bacterial growth (based on the teachings of Canada).

- Controlling or adjusting the air volume in the packaged meat to about 15% or less of the total package volume (or air to meat ratio of about 20% or less by volume), enhances the effect of heat treatment (i.e., sterilization/ pasteurization etc) or preserves the cooked seafood product better (Sugisawa, Column 3, lines 3-34 and Example 1).

Therefore, adjusting or controlling the volume of air in the package prior to sealing and pasteurizing was known in the art at the time of the invention (Doerter, Byrd, Canada). Adjusting the air to meat ratio in the recited range of 13-20% by partially vacuuming the pack, was also known in the art of packaged food (Sugisawa). It was also known at the time of the invention that 20-40% by volume of oxygen (based on the total gas volume of the package) is sufficient to prevent anaerobic bacterial growth in packaged seafood (Canada). Since atmospheric air is about 21% oxygen (which falls in the range of 20-40%), therefore, the presence of atmospheric or ambient air will similarly be adequate or sufficient in preventing anaerobic bacterial growth as recited in the rejected claims (based on teachings of Canada). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Doerter in view of Canada and Sugisawa and package crabmeat such that the package includes air in a suitable amount in order to prevent anaerobic bacterial growth, such as air in an amount of 18% (about 20%) of air by volume, in proportion to the packaged shellfish (crabmeat) product, at least in order to enhance the effect of heat treatment. One would have also been motivated to add air to the packaged food product in order to make the product with fewer additives and still provide some cushion (air) to prevent deterioration of crabmeat due to breaking. One would have been further motivated to package with air to food ratio of about 20% to have a packaged fish or shellfish product where anaerobic bacteriological damage is prevented during processing and storage.

Regarding claims 3, 4, 12, 13 and 20, Doerter teaches that the pouch used for packaging shellfish could be made of a high density polyethylene resin (Column 2, lines

42-43), however the reference is silent as to the material of the pouch being a multilayered film. Regarding the nature of the packaging material Sugisawa, teaches bags (containers), for packing cooked fish products, that are made from laminates of materials, such as nylon, polyethylene terapthalate (PET), polypropylene or cast polypropylene (CPP), aluminum foil etc., (Column 2, lines 61-68 and Column 3, line 65). Therefore, Sugisawa, teaches a multilayered (laminated) bag or container for packaging cooked fish etc., comprising PET, nylon, CPP and aluminum as recited by the applicant in claims 3, 4, 12, 13 and 20.

Flexible packages made of high-density polyethylene that can withstand heat treatments have been known in the art at the time of the invention, for packaging meats including shellfish and crabmeat (Doerter). Laminated multilayered flexible packages comprising of PET, nylon, aluminum (as an oxygen barrier) and cast polypropylene (CPP) etc., were also known at the time of the invention, for their application in high retort food packaging (Sugisawa). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the flexible package taught by Doerter and use a multilayered film package comprising of layers of thermoplastic resin like PET, with nylon, aluminum and CPP to pack the shellfish (crabmeat) package, as taught by Sugisawa, to ensure a strong, heat stable bag or pouch with better elasticity and tear resistance. One would have been further motivated to use a food package made with multilayered film as taught by Sugisawa for cooked food such as crabmeat to ensure that the seafood remain in a better condition after pasteurization (i.e., heat stabilization), transportation, storage etc., as compared to the seafood that is packaged in traditional packages.

Therefore, claims 3-5, 7, 10, 12-13, 15, 18-20 are rejected as being unpatentable over Doerter in view of the combination of Peterson Byrd, Air Liquide Canada and Sugisawa.

Rejection (B)

Claims 3-5, 7, 10, 12-13, 15 , 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueyama et al. (US 2002/0061412) in view of the combination of Peterson et al (J of Food Protection 8/1997, 60 (8), 928-934 (Abstract), Air Liquide Canada (RD 235012 Abstract only) and Sugisawa et al (US 4840805).

Regarding claims 3, 5, 7, 10, 12, 15, 18-19, Ueyama et al, hereinafter Ueyama, teaches a heat shrinkable multilayer film (Page 1, paragraphs [0001] and [0002]) and packages made using the film for packaging for meats such as crabs, fish and other marine products (Page 5, paragraph [0066]) and the product packaged using the multilayer film (Page 7, paragraph [0099] and other examples). Ueyama also teaches packaging the desired product in a vessel, such as a bag or pouch (Page 1, paragraph [0002]) and placing a volume of the desired product in the packaging vessel and forming a casing; sealing the bag or package (page 7, paragraphs [0094] and [0099]); and heat treating or sterilizing said sealed packaging vessel (Page 3, paragraph [0039]) as instantly claimed.

Ueyama teaches heat treatment of the packaged food and also as part of making the packaged food, however Ueyama is silent about pasteurization as the method employed for heat treatment, however, pasteurization was well known as a method of heat treatment for packaged food at the time of the invention. Peterson teaches pasteurization of crabmeat that is packed in oxygen-impermeable flexible pouches (Abstract). Regarding the effectiveness of pasteurization as the heat treatment for preservation of packaged meat, Peterson also teaches that pasteurization process extends the shelf life of packaged crabmeat by inactivating spores of clostridium botulinum and listeria monocytogenes (which are anaerobic bacteria). Peterson further teaches that sealed crabmeat in a pouch should be kept refrigerated in order to maintain the safety of the packaged crab product (Abstract). Further sterilization and pasteurization were both well-known as methods of heat treatment of foods used to control the microbial contamination in foods, at the time the invention was made. Both

methods have their advantages. The heat treatment of foods during pasteurization is less intense as compared to heat treatment during sterilization, thus the method is more suitable where exposure to intense heat for a prolonged period would result in undesirable, color, texture and flavor changes. Since pasteurization as a method of preservation of crabmeat was known at the time of the invention (Peterson), therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ueyama and perform the desired heat treatment (either pasteurization or sterilization) for the crabmeat depending on desired length of storage, available storage conditions, available type of package and other available processing conditions.

Ueyama is also silent regarding the atmosphere desired in the package for the prevention of growth of anaerobic bacteria as instantly claimed, however, Air Liquide Canada, hereinafter Canada, reference teaches of packaging fish and sea products (i.e., crabs, lobster etc.) under gaseous atmospheres with 60-80% by volume carbon dioxide and containing 20-40% by volume of oxygen, such that the development of strict anaerobic flora is avoided as instantly claimed. Since anaerobic bacteria grow in the absence of oxygen, therefore, it is the proportion of oxygen in the package that affects the growth of anaerobic bacteria. Thus Canada teaches that pasteurized crabmeat in the presence of about 20-40% oxygen by volume of the total gas volume of the package will be sufficient to avoid anaerobic bacterial growth. If 20-40% oxygen by volume can avoid anaerobic bacterial growth then atmospheric air or ambient air which is about 21% oxygen by volume, present in the package will be adequate or able to prevent or obstruct growth of anaerobic bacterial species, such as, clostridium botulinum and listeria monocytogenes etc. (based on the teachings of Canada), as instantly claimed.

Regarding the specific volume of the ambient air in the crabmeat package to about 13-20% (as recited in claims 10 and 18) or about 20% (as recited in claims 7, 15 and 19), Ueyama and Peterson are silent. However, Sugisawa teaches packaging the cooked fish product (seafood) under vacuum (Column 3, lines 7-8), where the volume of air in the package is preferably kept less than 15% of the volume of the entire package, to

improve the effect of sterilization and to prevent fish meat from breaking (Column 3, lines 3-34 and Example 1). Since there is 15% air in the package, therefore, the vacuum as taught by Sugisawa is a partial vacuum as recited in claim 5. Thus, Sugisawa teaches of use of partial vacuum in packaging as instantly claimed. Sugisawa also teaches that if the total volume of the package is 100, the air volume would be 15, i.e., the seafood (fish) volume taught by Sugisawa would be 85 and the resulting ratio of air to packaged food is 18% (about 20%) by volume, which falls in the range recited by the applicant in claims 5, 7, 10, 15, 18-19, absent any clear and convincing arguments and evidence to the contrary.

In summary, the prior art of record recognized the problem of packaging seafood and crabmeat while preventing anaerobic bacterial growth. Prior art also disclosed that in the art of packaging meat or fish or shellfish and especially crabmeat products the following facts/steps were known at the time of the invention:

- Packaging of fish, crabmeat or other seafood in flexible packages was known in the art at the time of the invention (Ueyama, Peterson and Canada).
- Controlling the amount of air from the package before sealing and heat treating (i.e., sterilizing or pasteurizing) the packaged food for longer and safe shelf life of the food (Ueyama, Peterson, Canada and Sugisawa).
- Placing a volume of crabmeat or fish or sea product or fish in the vessel was also known in the art (Canada and Sugisawa).
- Sealing the package after adjusting the volume of air was also known in the art (Canada and Sugisawa).
- Pasteurizing meat product as a method of heat treatment for preservation of seafood was known at the time of the invention (Peterson and Canada).
- Controlling and adjusting the relative proportion of oxygen to 20-40% by volume of the total gas volume can successfully avoid anaerobic bacterial growth in the packaged seafood (Canada). If 20-40% oxygen by volume can avoid anaerobic bacterial growth then presence of atmospheric air or ambient air (which is about

21% oxygen by volume) in the package will similarly be adequate or able to prevent or obstruct anaerobic bacterial growth (based on the teachings of Canada).

- Controlling or adjusting the air volume in the packaged meat to about 15% or less of the total package volume (or air to meat ratio of about 20% or less by volume), enhances the effect of heat treatment (i.e., sterilization/ pasteurization etc) or preserves the cooked seafood product better (Sugisawa, Column 3, lines 3-34 and Example 1). Thus adjusting the volume of air (oxygen) inside a package improves the storage properties of packaged shellfish as taught by Canada and Sugisawa.

Therefore, based on the above facts, it would have been obvious to one with ordinary skill in the art at the time of the invention to modify Ueyama in view of Canada and Sugisawa and package crabmeat such that the package includes air in a suitable amount at least for the purpose of preventing anaerobic bacterial growth, such as air in an amount of 18% (about 20%) of air by volume, in proportion to the packaged shellfish (crabmeat) product as taught by Sugisawa, at least in order to enhance the effect of heat treatment. One would be motivated to control the air volume in the packaged and heat treated (i.e., pasteurized or sterilized) meat in order to enhance the storage life of the packaged product by preventing microbial deterioration of packaged food by anaerobic bacterial growth (i.e., adequate volume of air in the package prevents anaerobic bacterial growth). Furthermore, one of ordinary skill in the art would have been motivated to package with air to food ratio of about 20% (Sugisawa) to have a packaged fish or shellfish product with less additives and an air cushion, which would help in reducing the physical damage during processing, transportation and storage, which is also the intent of the applicant.

Regarding claims 4, 13 and 20, the multilayered packaging film taught by Ueyama comprises at least one layer of polyethylene teraphthalate (PET), hereinafter PET, (Page2, paragraph [0024] and page 3, paragraph [0027]); at least one layer of nylon (Page 3, paragraphs [0029], [0032] and [0034]), however, the reference is silent as to the use of aluminum and cast polypropylene (CPP), hereinafter CPP. Regarding the nature of the packaging material Sugisawa, teaches bags (container), for packing cooked fish products, that are made from laminates of materials, such as nylon, PET, polypropylene or cast polypropylene (CPP), aluminum foil etc., (Column 2, lines 61-68 and Column 3, line 65). Thus Sugisawa, teaches a multilayered (laminated) bag for packaging cooked fish etc., comprising PET, nylon, CPP and aluminum as recited by the applicant in claims 4 and 13.

Flexible packages made of multilayered films comprising of PET and nylon that can withstand heat treatments have been known in the art for packaging meats including shellfish and crabmeat (Ueyama). Laminated multilayered flexible packages that comprise of PET, nylon, along with aluminum and cast polypropylene (CPP) etc., were also known in the art for their application in high retort food packaging (Sugisawa). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ueyama and use a multilayered film package that also comprises of layers of aluminum and cast polypropylene (CPP) along with the thermoplastic resin like PET and flexible nylon to pack the shellfish meat (crabmeat) in order to ensure a stronger and more heat stable bag or pouch with better elasticity and tear resistance. One would have been further motivated to use a food package made with multilayered films as taught by Sugisawa for cooked food such as crabmeat to ensure that a seafood package will remain in a good condition upon exposure to heat stabilization or pasteurization process as well as upon exposure to transportation and /or storage conditions.

Therefore, claims 3-5, 7, 10, 12-13, 15 and 18-20 are unpatentable over in view of the combination of Peterson, Air Liquide Canada and Sugisawa.

Rejection (C)

Claims 3-5, 7, 10, 12-13, 15 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lett et al (GB2343611A), in view of the combination of Peterson et al (J of Food Protection 8/1997, 60 (8), 928-934 (Abstract), Air Liquide Canada (RD 235012 Abstract only), Doerter (US 5268189) and Sugisawa (US 4840805).

Lett et al, hereinafter Lett, teaches of packaging crabmeat in a flexible bags or vessels made from a 170 micron PA-PE having a tubular bottom and the bags are laminated and heat resistant up to a 190^0C. Crabs are pasteurized and then cooled or chilled and then stored in a chilled container maintained between 0-4^0C (Page 4, lines 4-15). Lett is silent regarding the prevention of growth of anaerobic bacteria as instantly claimed, however Peterson teaches the effectiveness of pasteurization as a method of preservation. Peterson, teaches pasteurization of crabmeat that is packed in oxygen-impermeable flexible pouches (Abstract). Peterson also teaches that pasteurization process extends the shelf life of packaged crabmeat by inactivating spores of clostridium botulinum and listeria monocytogenes which are anaerobic bacteria. Peterson further teaches that sealed crabmeat in a pouch should be kept refrigerated in order to maintain the safety of the packaged crab product (Abstract). Thus, Peterson provides evidence that packaging of crabmeat in flexible pouches and pasteurizing the packaged crabmeat was known at the time of the invention. Peterson further teaches it was known in the art at the time of the invention that pasteurization is an effective method to inactivate the spores of anaerobic bacteria, such as, botulinum, when the pasteurized packages are stored under refrigeration, which is also the intent of the applicant.

Regarding the limitation that controlling the volume of air prevents the growth of anaerobic bacteria Lett is silent, however, Canada reference teaches of packaging fish and sea products (i.e., crabs, lobster etc.) under gaseous atmospheres consisting of 60-

80% carbon dioxide by volume and 20-40% by volume of oxygen, such that the development of strict anaerobic flora is avoided as instantly claimed. Since anaerobic bacteria grow in the absence of oxygen, therefore, it is the proportion of oxygen in the package that affects the growth of anaerobic bacteria. Thus Canada teaches that pasteurized crabmeat in the presence of about 20-40% oxygen in the atmosphere of the package will be sufficient to avoid anaerobic bacterial growth. Further, based on teachings of Canada reference, it is noted that if 20-40% oxygen by volume can avoid anaerobic bacterial growth then atmospheric air or ambient air (which is about 21% oxygen by volume) when placed in the package will similarly be adequate or able to prevent or obstruct anaerobic bacterial growth (based on the teachings of Canada), as instantly claimed.

Regarding controlling the volume of air in the package, Lett teaches of packaged crabmeat in brine and vacuum packaged (See page 3, lines 1-5), which results in controlling the volume of air. Similarly Doerter also teaches a process of treating and packaging fresh or cooked shellfish meat, such as crab, shrimp or lobster (Column 1, line 11and lines 52-65), by providing a packaging container like a pouch (Column 2, lines 38-39); placing a volume of crabmeat into said packaging vessel (Column 2, lines 35-36). Doerter teaches the addition of a mixture of carrageenan and water to the container containing the shellfish (crabmeat) to effectively removes air from the package, i.e., creates a partial vacuum, (Column 3, lines 6-10). Thus, Doerter teaches of controlling the volume of air within said packaging vessel. Doerter also teaches sealing of the container after packing (Column 3, lines 11-16) and subsequently sterilizing or pasteurizing the sealed container (Column 3, lines 17-25) as recited by the applicant in claims10, 18 and 19. Doerter also teaches of effectively heating the packaged product to kill microorganisms including Listeria monocytogenes (Column 3, lines 17-20). Killing the microorganisms, such as Listeria (anaerobic bacteria), by heat treatment methods taught by Doerter will prevent the growth of such anaerobic bacteria in the package, as instantly claimed. Thus packaging of shellfish meat including crab in flexible pouches was known at the time of the invention as taught by Lett and Doerter.

Also heat treatment of the packaged meat by pasteurization or sterilization in order to kill the naturally occurring bacteria (including anaerobic bacteria) was also known in the art of packaging shellfish meat at the time of the invention, as instantly recited in claims 10, 18 and 19.

Regarding controlling / adjusting the volume in the package, for example, Canada teaches of partial vacuum and adjusting the volume of air such that the anaerobic bacterial growth is avoided (Abstract) and Lett and Doerter teach adjusting the volume of air from the package by adding a mixture of brine and carrageenan respectively before sealing the package. As to the specific volume of ambient air in the package to obtain the ambient air to crabmeat ratio within the package to about 13-20% (as recited in claims 10 and 18) or about 20% (as recited in claims 15 and 7). Sugisawa teaches packaging the cooked fish product under vacuum (Column 3, lines 7-8), where the volume of air in the package is preferably kept to 15% of the total package volume, to improve the effect of sterilization and to prevent fish meat from breaking (Column 3, lines 7-16). Thus, Sugisawa teaches partial vacuum in the package as recited in claim 5. Sugisawa teaches that if the total volume of the package is 100, the air volume will be 15. Therefore, fish volume taught by Sugisawa will be 85 and the resulting ratio of air to fish/meat will be 18%, i.e., about 20% by volume, as recited by the applicant in claims 5, 7, 10, 15 and 18.

In summary, the prior art of record in combination, recognized the problem of packaging seafood and crabmeat while preventing anaerobic bacterial growth. Prior art also disclosed that in the art of packaging meat or fish or crabmeat the following facts/steps were known at the time of the invention:

- Packaging of fish, crabmeat or other seafood in flexible packages was known in the art at the time of the invention (Lett, Doerter, Peterson and Canada).

- Reducing the amount of air from the package before sealing and heat treating (i.e., sterilizing or pasteurizing) the packaged food for longer and safe shelf life of the food (Doerter, Peterson, Canada).
- Placing a volume of crabmeat or sea product or fish in the vessel was also known in the art (Canada).
- Sealing the package after adjusting the volume of air was also known in the art (Lett, Canada and Doerter).
- Pasteurizing meat as a method of heat treatment for preservation of seafood was known at the time of the invention (Lett, Peterson and Canada).
- Controlling and adjusting the relative proportion of oxygen to 20-40% by volume of the total gas volume can successfully avoid anaerobic bacterial growth in the packaged seafood (Canada). If 20-40% oxygen by volume can avoid anaerobic bacterial growth then presence of atmospheric air or ambient air (which is about 21% oxygen by volume) in the package will similarly be adequate or able to prevent or obstruct anaerobic bacterial growth (based on the teachings of Canada).
- Controlling or adjusting the air volume in the packaged meat to about 15% or less of the total package volume (or air to meat ratio of about 20% or less by volume), enhances the effect of heat treatment (i.e., sterilization/ pasteurization etc) or preserves the cooked seafood product better (Sugisawa, Column 3, lines 3-34 and Example 1). Thus adjusting the volume of air (oxygen) inside a package improves the storage properties of packaged shellfish as taught by Canada and Sugisawa.

Thus adjusting or controlling the volume of air in the package prior to sealing and pasteurizing was also known in the art at the time of the invention (Doerter, Canada, Sugisawa). Adjusting the air to meat ratio in the recited range of 13-20% by partially vacuuming the pack, was known in the art of packaged food (Sugisawa). It was also known at the time of the invention that 20-40% by volume of oxygen (based on the total

gas volume of the package) is sufficient to prevent anaerobic bacterial growth in packaged seafood (Canada). If 20-40% oxygen by volume can avoid anaerobic bacterial growth then atmospheric air or ambient air which is about 21% oxygen by volume, present in the package will be adequate or able to prevent or obstruct growth of anaerobic bacterial species, such as, clostridium botulinum and listeria monocytogenes etc. (based on the teachings of Canada), as instantly claimed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lett in view of Canada and Sugisawa and package crabmeat such that the package includes air in a suitable amount at least for the purpose of preventing anaerobic bacterial growth, such as air in an amount of 18% (about 20%) of air by volume, in proportion to the packaged shellfish (crabmeat) product as taught by Sugisawa, at least in order to enhance the effect of heat treatment. One would have also been motivated to modify Lett and add air to the packaged food product in order to make the product with fewer amounts of additives (brine) and still provide some cushion (air) to prevent deterioration of crabmeat due to breaking. One would have been further motivated to package with air to food ratio of about 20% to have a packaged fish or shellfish product with less bacteriological damage during processing and storage.

Regarding claims 3, 4, 12-13 and 20, Lett teaches that the pouch or bag for packaging crabmeat are made from a 170 micron PA-PE having a tubular bottom and the bags are laminated and heat resistant up to a 190^0C. Doerter teaches of bags that are made of a high-density polyethylene resin (Column 2, lines 42-43). Sugisawa, teaches bags (container), for packing cooked fish products, that are made from laminates of materials, such as nylon, polyethylene terapthalate (PET), polypropylene or cast polypropylene (CPP), aluminum foil etc., (Column 2, lines 61-68 and Column 3, line 65). Therefore, Sugisawa, teaches a multilayered (laminated) bag for packaging cooked fish etc., comprising PET, nylon, CPP and aluminum as recited by the applicant in claims 3, 4, 12-13 and 20.

Thus, flexible packages made of high-density polyethylene that can withstand heat treatments were known in the art for packaging meats including shellfish and crabmeat (Lett and Doerter) at the time of the invention. Laminated multilayered flexible

packages that comprising of PET, nylon, aluminum (oxygen barrier) and cast polypropylene (CPP) etc., were also known in the art for their application in high retort food packaging (Sugisawa). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the PA-PE package of Lett and use a multilayered film bag or vessel or package comprising of layers of thermoplastic resin like PET, with nylon, aluminum and CPP to pack the shellfish (crabmeat) in order to ensure a strong, heat stable bag or pouch with better elasticity and tear resistance. One would have been further motivated to use a food package made with multilayered film as taught by Sugisawa for cooked food, such as crabmeat, ensure that a seafood package will remain in a good condition upon exposure to heat stabilization or pasteurization process as well as upon exposure to transportation and /or storage conditions.

Therefore, claims 3-5, 7, 10, 12-13, 15 and 18-20 are unpatentable over Lett, in view of the combination of Peterson, Air Liquide Canada, Doerter and Sugisawa.

Rejection (D)

Claims 3-5, 7, 10, 12-13, 15 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker et al (US3852486) in view of the combination of Ueyama et al. (US 2002/0061412) and Sugisawa et al (US 4840805).

Regarding claims 10, 18 and 19, Walker et al., hereinafter Walker teaches a process of preserving shellfish meat, including crabmeat, by packaging and pasteurizing shellfish meat, such that the pasteurization is effective in destroying all the pathogenic bacteria and inhibit the growth of clostridium botulinum (which is an anaerobic bacterial species) under conditions of mild refrigeration (Abstract, Column 2, lines 14-35).

Walker teaches of pasteurization of the meat in such a way as to avoid recontamination. Walker also teaches of placing the meat in flexible plastic bags and seal by heat sealing (Column 4, line 39-68) as recited in claims 10, 18 and 19. Regarding the volume of air in the package Walker teaches of making thin flat packages

to accelerate heat penetration into the package (Column 5, lines 39-58 and 59-68), i.e., partial evacuation of the package by flattening the packages. Walker also teaches that the cooked meat is placed in packages where the packages are left unsealed in order to prevent damage to the plastic bags or vessels by the rapid expansion of air during heating (i.e., adjusting or controlling the air volume). The packages of cooked pasteurized meat are sealed automatically at the end of the pasteurization process under sterile conditions (Column 6, lines 33-65). Thus the reference teaches of the method of packaging crabmeat and a packaged crabmeat product in flexible pouches, adjusting the volume, preventing anaerobic bacterial growth and pasteurizing as recited.

Regarding the characteristics of the package as recited in claims 3, 12 and 20, Walker is silent, however, Ueyama teaches a heat shrinkable multilayer film and packages made using the film for packaging for meats such as crabs, fish and other marine products (Page 5, paragraph [0066]) and the product packaged using the multilayer film (Page 7, paragraph [0099] and other examples). Ueyama also teaches packaging the desired product in a vessel, such as a bag or pouch (Page 1, paragraph [0002]) and placing a volume of the desired product in the packaging vessel and forming a casing; sealing the bag or package (page 7, paragraphs [0094] and [0099]); and heat treating (by sterilizing) said sealed packaging vessel (Page 3, paragraph [0039]).

Regarding controlling the volume of the package, Walker teaches of adjusting the air volume by letting the heated air in the package expand. Walker and Ueyama do not specify any specific air to crabmeat ratio to prevent undetected anaerobic bacterial growth, however, Sugisawa teaches packaging the cooked fish product under vacuum (Column 3, lines 7-8), where the volume of air in the package is preferably kept at less than 15% of the total package volume, to improve the effect of sterilization and to prevent fish meat from breaking (Column 3, lines 3-34 and Example 1). Thus, Sugisawa teaches of controlling the air in the package by having partial vacuum in the package (as recited in claim 5) where if the total volume of the package is 100, the air volume will be 15. Therefore, fish volume taught by Sugisawa will be 85 and the resulting ratio of air

to fish/meat will be 18%, i.e., about 20% by volume, as recited by the applicant in claims 5, 7, 10, 15, 18 and 19.

In summary, the prior art of record in combination, recognized the problem of packaging food while preventing anaerobic bacterial growth in packaged meat or fish or shellfish or especially crabmeat products. The following facts/steps were known at the time of the invention:

- Anaerobic bacterial growth in packaged foods was a known problem at the time of the invention, for example, growth of clostridium botulinum (anaerobic bacteria) in packaged canned goods was well known cause of spoilage of packaged food known at the time of the invention (Walker).
- Packaging of fish, crabmeat or other seafood in flexible packages was known in the art at the time of the invention (Walker and Ueyama).
- Reducing the amount of air from the package before sealing and heat treating (i.e., sterilizing or pasteurizing) the packaged food for longer and safe shelf life of the food (Ueyama, and Sugisawa).
- Placing a volume of crabmeat or sea product or fish in the vessel was also known in the art (Walker, Ueyama and Sugisawa).
- Sealing the package after adjusting the volume of air was also known in the art (Walker and Sugisawa).
- Pasteurizing meat as a method of preservation of seafood was known at the time of the invention (Walker).
- Controlling or adjusting the air volume in the packaged meat to about 25-15% or less of the total package volume (or air to meat ratio of about 33-18% or less by volume), enhances the effect of heat treatment (i.e., sterilization/ pasteurization etc) or preserves the cooked seafood product better (Sugisawa, Column 3, lines 3-34 and example 1, Column 3, lines 65-66). Thus controlling /adjusting the volume of air (oxygen) inside a package improve the storage properties of packaged shellfish as taught by Sugisawa.

Therefore, based on the above discussion, it would have been obvious to one with ordinary skill in the art at the time of the invention to modify Walker to package the shellfish (crabmeat) in a package made of multilayered film as taught by Sugisawa and control the volume of air inside the package by creating a partial vacuum such that the package includes air in a suitable amount at least for the purpose of preventing spoilage due to anaerobic bacterial growth, such as, the air to meat ratio of 18% (which includes about 20%) is achieved as taught by Sugisawa. One would be motivated to control the air volume in the packaged and heat treated (i.e., pasteurized or sterilized) meat in order to enhance the storage life of the packaged product by preventing microbial deterioration of packaged food by anaerobic bacterial growth. Furthermore, one of ordinary skill in the art would have been motivated to package with air to food ratio of about 20% (Sugisawa) to have a packaged fish or shellfish product with fewer additives in the packaged product and also have an air cushion, which will help in reducing the physical damage during processing, transportation and storage.

Regarding claims 4, 13 and 20, Walker teaches of a plastic package for the crabmeat (Column 6, lined 33-38), however the reference does not teach the multilayered packaging film. Ueyama teaches of a multilayered film that comprises at least one layer of polyethylene teraphthalate or PET (Page 2, paragraph [0024] and page 3, paragraph [0027]); at least one layer of nylon (Page 3, paragraphs [0029], [0032] and [0034]), however, the reference is silent as to the use of aluminum and cast polypropylene. Regarding the nature of the packaging material Sugisawa, teaches bags (container), for packing cooked fish products, that are made from laminates of materials, such as nylon, polyethylene terapthalate (PET), polypropylene or cast polypropylene (CPP), aluminum foil etc., (Column 2, lines 61-68 and Column 3, line 65). Therefore, Sugisawa, teaches a multilayered (laminated) bag for packaging cooked fish etc., comprising PET, nylon, CPP and aluminum as recited in claims 4, 13 and 20.

Flexible packages made of multilayered films comprising of PET and nylon that can withstand heat treatments were known in the art for packaging meats including shellfish and crabmeat (Walker and Ueyama).
Laminated multilayered flexible packages that comprise of PET, nylon, aluminum and cast polypropylene (CPP) etc., were also known in the art for their application in high retort food packaging (Sugisawa). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Walker and use a multilayered film package that also comprises of layers of aluminum and CPP along with the thermoplastic resin like PET and flexible nylon to pack the shellfish (crabmeat) package to ensure a stronger and more heat stable bag or pouch with better elasticity and tear resistance. One would have been further motivated to use a food package made with multilayered film as taught by Sugisawa for cooked food, such as crabmeat, ensure that a seafood package will remain in a good condition upon exposure to heat stabilization or pasteurization process as well as upon exposure to transportation and/or storage conditions.

Therefore, claims 3-5, 7, 10, 12-13, 15 and 18-20 are rejected as being unpatentable over Walker in view of the combination of Ueyama and Sugisawa.

Response to Arguments

Applicant's arguments filed 7/6/2009 and Affidavit by the inventor John Keeler Sr. have been fully considered but they are not persuasive.

Response to Arguments regarding Rejection (A) and Applicant's Declaration

i) Applicant argues that one of ordinary skill in the art would not even consider Sugisawa, based on the conclusion that "Sugisawa is directed to a different field of endeavour from packaging a pasteurizing crabmeat" (Remarks, page 6, paragraph 4, lines 5-7 and Keeler Declaration, paragraphs 9-13). In response to applicant's arguments against the references individually, one cannot show nonobviousness by

attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In the instance case In the instant case, Sugisawa is not being relied in an anticipation (i.e. 35 USC 102) rejection but in an obviousness rejection (i.e. 35 USC 103) where the combined teaching of the references, and not any one individual reference, is being relied upon to teach the obviousness of a claimed invention. In the instant case, Sugisawa is not being relied upon to teach a package for crabmeat – that aspect is already taught e.g., by Doerter, and the concepts taught by Sugisawa are applicable to Doerter's package, as explained earlier.

Similarly applicants' argument that Sugisawa teaches sterilization (Page 7, Para 2) and invention as claimed requires pasteurization is also not persuasive for the same reason as one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. Pasteurization as a method of heat treating is taught by Doerter, Peterson, Byrd, Canada, Lett and Walker and Sugisawa is not relied upon to teach the heat treatment step as argued (also see the rejections above.

Applicant's argument and statement 16 in the affidavit that "sterilization" and "pasteurization" are two distinct process" and conclude that sterilization is not suitable for crabmeat (Remarks, Page 7 and Affidavit page 4, point 16). This argument is not persuasive. First of all, applicant appears to imply that packaging of "fish" and "crabmeat" are non-analogous art, which is not persuasive. It has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Sugisawa teaches of packaging fish or fresh sea products, which would encompass crabmeat.

Further, applicant also appears to allege that sterilization and pasteurization are also non-analogous art by stating that "a person skilled in the art would not look to a

reference directed to sterilizing dried, broiled fish when seeking to package pasteurized crabmeat". This argument is not persuasive. Sterilization and pasteurization are both widely known methods of heat treating foods to control, for example, microbial content of the food. Thus, they are related processes. Further, Doerter and not Sugisawa is relied upon to teach pasteurization. In fact, Doerter teaches that packaged shellfish can either be pasteurized or sterilized (Column 3, lines 17-25), further confirming that it is common in the art to look at both pasteurization and sterilization by people skilled in the art of packaging food for preservation.

ii) First of all, applicant appears to imply that packaging of “fish” and "crabmeat” are non-analogous art, which is not persuasive (Remarks, Page 6 and Declaration , page 4, points 9-14). It has been held that a prior art reference must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Sugisawa teaches of packaging fish or fresh sea products, which would encompass crabmeat. .

Similarly applicants’ argument against Sugisawa and Canada that “nothing in Sugisawa and Air liquide … would direct a person having ordinary skill in the art to intentionally leave a certain minimum quantity of air in the package” and "air having 21% oxygen and 0.03% carbon dioxide" would not work as well as "air liquide's modified atmosphere having 20% oxygen and 80% carbon dioxide (remarks, page 7, last Para and page 8) are not persuasive as discussed in the rejection above. Both the references teach adjusting the volume of air which effectively adjusts the amount of oxygen in the packaged product and it is the presence and amount of oxygen and not the amount of carbon dioxide that prevents the growth of anaerobic bacteria. Thus once again the prior art is trying to solve the same problem (i.e., preventing anaerobic bacterial growth in the packaged product) as is being solved by the applicant.

In addition applicants' declaration in point 15 (Declaration , page 4), states that the bacterial flora of crabmeat are distinct , however, claim as recited is concerned with adjusting the amount of air, such that anaerobic bacterial growth can be prevented (by providing a specific volume of air in the package), which relates to the presence of oxygen in the package and can be solved by providing a certain amount of oxygen in the package, as discussed above.

Furthermore, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). As discussed above regarding the rejections.

iii) Applicant's arguments that other references, such as Doerter, Air liquide (Canada) and Peterson teach away from the invention are not persuasive. The examiner submits that Sugisawa teaching of a specific ratio of air by volume in the package does not change the principle of operation of the primary reference or render the reference inoperable for its intended purpose. See MPEP § 2143.01. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference.... Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). See also *In re Sneed*, 710 F.2d 1544, 1550, 218 USPQ 385, 389 (Fed. Cir. 1983). It is not necessary that the inventions of the references be physically combinable to render obvious the invention under review."; and *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973). Combining the teachings of references does not involve an ability to combine their specific structures. Thus, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.

See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Therefore, prior arts must be considered in entirely, including discloses that teach away from the claims, MPEP § 2143.01-02. In the instant case, Doerter teaches a specific package environment and that package environment is being modified by the package environment taught by Sugisawa, and motivation provided, in the rejection A of independent claims 10 and 18.

Similarly Byrd discloses minimizing the amount of air in the container by, for example, vacuumizing or tightly packaging…". This does not imply that Byrd reference only operates when there is a complete vacuum. The vacuumizing is simply a process of removing air to control air volume, not necessarily complete removal of air. More specifically, Byrd teaches that it is desirable to reduce the amount of air space (control the volume of air) in the package by packing tightly (Column 2, lines 44-49), which would create partial vacuum. Therefore, Byrd reference does not teach against achieving a specific air to meat volume ratio.

Similarly the argument that "Air Liquide reference teaches away from a packaged crabmeat product...". Applicant argues that Air Liquide (referred to as Canada reference in office actions) teaches "requires the removal of all air from the package before introducing a specific gaseous atmosphere". This does not imply that Canada reference teaches away simply because it has an additional step where air is first removed before the step of creating a specific package atmosphere. Applicant further argues that "the requirement of an ambient air to crabmeat ratio of about 13 to 20 percent by volume would compromise the modified atmosphere taught by Air Liquide reference and would render the modified atmosphere inadequate for its intended purpose". Again, as explained above, the argument is not persuasive because the package taught by Air Liquide reference is capable of supporting a different atmosphere (such as a gaseous atmosphere with the claimed ambient air percentage) – this change does not change the principle of operation of the primary reference or render the reference inoperable for its intended purpose (i.e. preventing anaerobic bacterial growth in the package).

Applicant argues that Peterson does not teach “a packaged crabmeat product having an ambient air to crabmeat ratio of about 13 to 20 percent by volume”. In response to applicant's above arguments against the references individually (i.e. Peterson reference individually), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In the instant case, Peterson is not being relied upon to teach a package or a packaged product having “an ambient air to crabmeat ratio of about 13 to 20 percent by volume”. Instead, Sugisawa reference is relied upon for this teaching.

Response to Arguments regarding Rejection (B)

On pages 9-10, applicant alleges that Ueyama teaches "a heat shrinkable multi-layered film and packages", see page 9, last paragraph, and concludes that the reference “teaches away” citing that if the teachings of Ueyama were “applied to the packaged crabmeat during the pasteurization process, thereby rendering it difficult, if not impossible, to achieve the desired ambient air to crabmeat ratio...". This argument is not persuasive. Ueyama teaches package shrinkage but it does limit the size of the package and does not preclude the presence of air in the package. Removing all the air from the package of Ueyama is one of the possibilities, but not a requirement. Thus, it is not clear why applicant believes it would not be possible to create a specific atmosphere in the package. Further, the examiner submits that Sugisawa’s teaching of a specific ratio of air by volume in the package does not change the principle of operation of the primary reference (Ueyama) or render the reference inoperable for its intended purpose. See MPEP § 2143.01. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference.... Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). See also *In re Sneed*, 710 F.2d

1544, 1550, 218 USPQ 385, 389 (Fed. Cir. 1983). It is not necessary that the inventions of the references be physically combinable to render obvious the invention under review."; and *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973). Combining the teachings of references does not involve an ability to combine their specific structures. Thus, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Therefore, prior arts must be considered in entirely, including discloses that teach away from the claims, MPEP § 2143.01-02.

Response to Arguments regarding Rejection (C)

On page 10, applicant presents a new argument stating that Lett et al. reference teaches away from a packaged crabmeat product having an ambient air to crabmeat ratio of about 13 to 20 percent by volume. Applicant appears to conclude this because Lett reference teaches "packing crab (whole crab)" in a plastic pouch that has been "filled with brine and has been vacuum sealed to remove air" (Page 10). This argument is not persuasive. The recitation of independent claim 10 (as also claims 18 and 20) requires air but does not exclude the presence of other elements like water or brine. Further, brine is a fluid composition design to achieve specific packaging objectives that may include preservation, cushioning, etc. which is also true of air. Thus, the mere use of a different fluid (i.e. air instead of water as part of brine) does not change the principle of operation of the reference. The examiner submits that Lett does not teach away from a specific ratio of air by volume in the package because use of such a volume ratio (where the fluid used is air) does not change the principle of operation of the primary reference or render the reference inoperable for its intended purpose. See MPEP § 2143.01

Response to Arguments regarding Rejection (D)

On page 11, applicant presents arguments with respect to Walker reference. However, no new arguments are presented. The arguments of “combination" of references and the “an ambient air to crabmeat ratio of about 13 to 20 percent by volume” have already been addressed. The arguments are presented with respect to Walker reference but are similar to previous arguments. As indicated in the rejection, Walker is not relied upon to teach the claimed ratio. However, applicant also argues that Walker teaches away because it teaches “impregnating the cooked meat with an aqueous solution of an inorganic chloride …an antibacterial agent …and an organic acid” , however no specific argument is presented regarding Walker. Regarding the claims it is noted that although the claims as recited require air but do not exclude the presence of other elements like an aqueous solution. Further, an aqueous solution may be a fluid composition designed to achieve a specific packaging objective that may include preservation, cushioning, etc. which is also true of air. Thus, the mere use of a different fluid (i.e. air instead of water as part of aqueous solution) does not change the principle of operation of the reference. As such, the examiner submits that Walter does not teach away from a specific ratio of air by volume in the package because use of such a volume ratio (where the fluid used is air) does not change the principle of operation of the primary reference or render the reference inoperable for its intended purpose. See MPEP § 2143.01.
Further the claims recite “ product comprising …”., and comprising is an open ended term. It has been held that the use of the term “comprising” leaves a claim open for inclusion of material or steps other than recited in the claims. Ex parte Davis, 80 USPQ 448 (PTO Bd. App. 1948). Use of the term « comprising » does not exclude the presence of the element. In re Hunter, 288 F. 2d 930, 129 USPQ 25 (CCPA 1961).

Declaration Under 35 USC 1.132 by John Keeler Sr. has been fully considered but has not been found persuasive (see response to arguments above).
Therefore, rejections are maintained for reasons of record and claims 3-5, 7, 10, 12-13, 15, 18-20 are rejected.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JYOTI CHAWLA whose telephone number is (571)272-8212. The examiner can normally be reached on 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/JC/
Examiner
Art Unit 1794

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